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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/896,432	06/29/2001	Edward Paul Cernocky	SOC-105	8240

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EXAMINER
BLACKNER, HENRY A.

ART UNIT	PAPER NUMBER
3641	

DATE MAILED: 04/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/896,432	Applicant(s) CERNOCKY ET AL.	
	Examiner Henry A. Blackner	Art Unit 3641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 March 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☒ The proposed drawing correction filed on *24 March 2003* is: a)☒ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *11* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1-5 and 7 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by U.S. Patent No. 4,884,506 to Guerreri.

In regards to claim 1, Guerreri clearly illustrates a detonation device (10) for detonating an explosive charge comprising of a command unit (11), a translator unit (12), a control unit (13), which is comprised of a wireless receiver (61), a microprocessor and control means (62), a firing mechanism (63), which is comprised of an electric blasting cap (104) with an explosive bridge wire and an energy storage and triggering means (110), in figures 1-3 and 5 and column 3 lines 1-8, lines 11-26, and lines 30-51, column 4 lines 3-10 and lines 15-29, column 6 lines 57-68, and column 7 lines 1-14 and line 26.

In regards to claims 2-4, Guerreri clearly illustrates a coded wireless signal that allows selective detonation of a plurality of explosive charges individually, in sequence, and in any desired pattern in figures 2, 3, 4, and 4a and column 3 lines 45-51, column 4 lines 30-66, column 5 lines 1-41 and lines 50-64, column 6 lines 5-9, lines 12-24, and lines 40-56.

In regards to claim 5, Guerreri clearly illustrates that the coded wireless signal does not transmit the power that is required to detonate the explosive charges, as identified in the rejections of corresponding parts of claims 2-4 and claims 9-11, above.

In regards to claim 7, Guerreri clearly illustrates that said microprocessor includes a digital signal processing logic, as identified in the rejections of corresponding parts of claims 2-4 and claims 9-11, above.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Guerreri in view of Neyer.

Guerreri discloses the claimed invention in figure 5 and column 6 lines 64-68 and column 7 lines 1-14, that the means for explosive charge (14) is comprised of a shape charge with a solid explosive (101), which is initiated by an electric blasting cap (104). The electric blasting cap, which comprises an explosive bridge wire, is initiated with the application of an electric current, which is applied via a capacitor discharge-blasting machine (110) and initiating switch (105), to

the explosive bridge wire. Guerreri does not illustrate that the explosive bridge wire is composed of an electrical circuit that is formed on a circuit board with an aperture and a portion of the electrical circuit overlying the aperture.

Neyer teaches in figures 2 and 3 and column 2 lines 38-46 and lines 65-69 and column 3 lines 1-3, lines 11-18, and lines 23-37, that a chip slapper (40) that is composed of a ceramic substrate (20) and contains a coating of a metal film, which is etched into the shape of spaced conductive lands (14) and (16) and bridge member (42), and is deposited with a flyer layer (20) of dielectric coating. The bridge member is a curved shape, typically a circle, and includes a cavity (44). When a current is applied to the chip slapper, via the conductive lands, the bridge member is vaporized and produces a circular shaped flying plate (48). The circular shaped flying plate is produced by the cavity, which results in a shock wave focused to a higher pressure, due to the flying plate's ability of sticking to the substrate. The flying plate's ability to sticking to the substrate is due to the decrease in plasma driving the inner surface of the bridge member. It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ Neyer's improved shaped bridge slapper in order to achieve a larger shock wave to detonate an explosive, by using less energy than is required for a conventional bridge slapper.

Claims 8-12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Snider in view of Abouav, and further in view of Guerreri.

In regards to claim 8, Snider discloses a method for perforating a tubular with a designated explosive charge located down hole in a well bore in claim 1:

1. *A process for establishing fluid communication comprising:*
   positioning at least one explosive charge in a subterranean well bore such that said at least one explosive charge is placed external to casing which is also positioned within said well bore and is aimed toward said casing; and

detonating said at least one explosive charge so as to perforate the wall of said casing at least once.

Snider does not illustrate a detonating explosive charge having a wireless receiver, a microprocessor and control means connected to the wireless receiver, at least one explosive bridge wire, a high voltage supply means, an energy storage, a trigger means, and a method of transmitting a coded signal to an individual detonator assembly, in order to activate an individual detonator assembly among a plurality of detonator assemblies.

Abouav teaches in figure 1 and column 5 lines 45-56 and lines 62-68, that a quarry face (2) contains a number of well bores (4), which contain detonator assemblies (6) located in each well bore. The detonator assemblies are connected by conductors (10) to an antenna (11) for a radio transceiver (12) located in one or more of the assemblies. The radio transceiver receives control signals from a controller (14) via a transceiver (15) so that the detonator assemblies can be actuated by a wireless remote control. The detonator assemblies are synchronized to be activated at an establish time, after the controller has transmitted the signals for the blast to commence. It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ Abouav's method of activating the detonator assemblies in order to achieve the desired effect of activating the detonator assemblies in a precisely defined time sequence so that efficient use is made of the blasting materials.

Guerreri teaches, in the corresponding rejection of claim 1 above, a method of activating an individual detonator assembly among a plurality of detonator assemblies. It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ Guerreri's apparatus in order to achieve the desired effect of producing a blasting system, which

is comprised of a plurality of detonator assemblies that are individually detonated by a wireless remote command source.

In regards to claims 9-11, see rejections of corresponding parts of claims 2-4 above.

In regards to claim 12, see rejections of corresponding parts of claim 5 above.

In regards to claim 14, see rejections of corresponding parts of claim 7 above.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Snider in view of Abouav, further in view of Guerreri as applied to claim 8 above, and further in view of Neyer.

Snider in view of Abouav, and further in view of Guerreri discloses the claimed method above, but does not illustrate an electrical circuit, which is formed on a circuit board that contains an aperture, overlying the aperture in order to form an explosive bridge wire, that when energized by an application of power, will flash vaporize causing detonation of a nearby explosive charge.

Neyer teaches, in the corresponding rejection of claim 6 above, an electrical circuit that overlies an aperture of a circuit board in order to form an explosive bridge wire. It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ Neyer's improved shaped bridge slapper in order to achieve a larger shock wave to detonate an explosive, by using less energy than is required for a conventional bridge slapper.

Response to Arguments

Applicant's argument filed 24 March 2003 has been fully considered but is not persuasive. In response to Applicant's argument that the detonation of a designated explosive charge in order to perforate a tubular in a well bore, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the

claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Henry A. Blackner whose telephone number is 703-305-4799. The examiner can normally be reached on 09:15 - 17:45.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Carone can be reached on 703-306-4198. The fax phone numbers for the organization where this application or proceeding is assigned are 703-306-4196 for regular communications and 703-305-3597 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-5771.

hab
April 10, 2003